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Asian Growth Research Institute

Are Married Women Really Wealthier than Unmarried Women? Evidence from Japan[1]

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Abstract

Using microdata from the Japanese Panel Survey of Consumers, this paper examines the relationship between marriage and wealth with particular focus on women. By exploiting unique data on personal wealth, it also assesses whether the wealth effect of marriage differs depending on whether we measure wealth in terms of personal wealth or household wealth, an issue that very few studies have examined thus far. When wealth is measured in terms of equivalized household net worth on the assumption that household resources are shared equally within married couples, marriage is found to contribute to women's wealth holdings but only to their nonfinancial net worth, although there are some signs that it also contributes to their total net worth as the duration of marriage becomes longer. By contrast, when wealth is measured in terms of personal net worth based on the actual ownership of assets, marriage is found to be negatively and significantly associated with women's wealth holdings. These findings underscore the fact that women in Japan are potentially in a financially vulnerable position even after they marry, which is driven, at least partly, by the fact that married women's careers tend to be disrupted by family responsibilities in Japan.

JEL Classification: D13, D14, D31, J12
Keywords: marriage, wealth, intrahousehold resource allocation, Japan

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1. Introduction

Family structure has been undergoing significant changes in many, if not all, developed countries. Fewer and fewer people marry today than in the past. At the same time, there has been an increase in the average age at first marriage as well as in the divorce rate. Such trends raise the important question of how singles fare in terms of wealth accumulation in comparison to their married counterparts. Wealth is an important measure of wellbeing as it provides resources to maintain living standards in times of economic hardship, and it is also important as a source of funds for living expenses during old age and for intergenerational transfers. There is thus a growing literature that examines the relationship between marriage and wealth and previous studies generally find a positive effect of marriage on wealth (e.g., Frech, Painter, and Vespa, 2017; Painter, Frech, and Williams, 2015; Ruel and Hauser, 2013; Ulker, 2009; Vespa and Painter, 2011).

However, there are a number of important gaps in the literature. First, previous studies typically use household wealth as their main outcome variable due largely to the unavailability of data on personal wealth. If a couple shares household resources equally, as commonly assumed, there should be no problem with using household wealth to analyze the wealth effect of marriage. On the other hand, given that an individual's contribution to household wealth is likely to affect his/her access to household wealth, it is possible that wives, who tend to earn less than their husbands, have less access to it. Moreover, even if spouses fully share each other's wealth regardless of the actual ownership of wealth, relying on one's spouse to informally share his/her personal wealth may create undesired economic dependency within the couple (Lersch, 2017).

Second, previous studies predominantly examine the instantaneous effect of marriage on wealth. While there are some studies that look at the effect of the duration of marriage on wealth, the estimation strategy in such studies assumes a linear relationship between marriage and wealth (e.g., Frech, Painter, and Vespa, 2017; Ulker, 2009; Zagorsky, 2005). However, married couples are likely to experience important changes through their married lives, as a result of which the wealth effect of marriage may change over time.

Third, previous studies are conducted using mostly data on Australia, Europe, and the United States (US). To the best of the author's knowledge, there are no previous studies that examine the relationship between marriage and wealth in Japan. It is not clear a priori whether the findings of previous studies obtained for Western societies apply to other

parts of the world such as Asia where gender roles within households are more clearly delineated than in Western societies.

The main aim of this paper is to fill the aforementioned gaps in the literature. Using microdata from the Japanese Panel Survey of Consumers (JPSC), it aims to examine the relationship between marriage and wealth in the case of Japan. It focuses its analysis on the case of women given long-standing concern regarding their financial security as they age, particularly in the case of those who remain single or those who experience such disruptions as marital breakdowns and widowhood.

The key research questions that this paper tries to answer are threefold. First, by exploiting the availability of data on personal wealth, it tries to assess how marriage is associated with women's wealth accumulation capacity and whether this association differs depending on whether we measure wealth in terms of household or personal wealth, an issue that very few studies have examined thus far. Second, this paper tries to go beyond the existing literature by examining how the relationship between marriage and wealth evolves over the course of the marriage and whether this over-time relationship differs between household and personal wealth and between financial and nonfinancial wealth. Third, by examining the case of Japan, the paper tries to assess whether marriage wealth premiums observed in Western societies are also observed in Japan.

While the JPSC provides unique data on personal wealth, the data are not without limitations. Most importantly, in cases where nonfinancial wealth is owned jointly by family members, the data do not tell us each family member's exact ownership share, although they tell us which family member has joint ownership of the asset. This certainly poses a nontrivial constraint on the analysis and the results need to be interpreted with caution. Nevertheless, the data still provide a unique opportunity to open the black box of how wealth is shared within married couples and to examine how marriage is associated with women's wealth accumulation capacity.

2. Institutional Context

Japan has a unique institutional context, which makes it difficult to share household wealth within married couples, at least in legal terms. Japan adopts a separation of property regime. Partly as a result, joint bank accounts are virtually non-existent and saving is held individually even among married couples. However, if the couple has a

bank account in one of the spouses' names, the other spouse can apply for an additional bank card (a "family card") to access this account. Wealth transfers between spouses are subject to gift taxes although there is an annual exemption of 1.1 million yen (about US$10,000).[2] Transfers for financing expenses such as living expenses and children's education are also exempted from gift taxes.

It is interesting to note that while wealth transfers between spouses are subject to gift taxes, the wealth accumulated during marriage is treated as joint assets upon divorce or the death of one of the spouses. In the case of divorce, a spouse can therefore claim part of the wealth accumulated during marriage even if it is in the other spouse's name, except for wealth acquired through intergenerational transfers, which will remain in the hands of the recipient.

In the case of the death of one of the spouses, according to Japan's Civil Code, the surviving spouse's statutory share is half of the estate of the deceased and the other half is divided among the children. Nevertheless, if the surviving spouse inherits the residence, most or all of the financial assets could go to the children because housing typically comprises a large share of household wealth in Japan. The financial hardship a widow could face upon the death of her husband has long been an issue in Japan given that the residence (and the land) is usually in the husband's name and wives tend to outlive their husbands. As a result, even though the wife may be able to continue living in the residence by inheriting it, she may find herself in a situation in which she does not have enough financial assets to finance her living expenses.

To better protect surviving spouses, the inheritance chapter of Japan's Civil Code was amended in July 2018. Among other things, the amendment created the right for the surviving spouse to continue living in the residence that was owned by the deceased spouse. The right of long-term residency allows the surviving spouse to continue living in the residence for life or for a specified lengthy period of time even if the ownership of the residence is transferred to another heir. Since the value of the right of residency will be set lower than the appraised value of the property, the surviving spouse will be able to obtain more financial assets if he/she obtains the right of residency and the child inherits the property than if he/she inherited the property in order to continue living there.

[2] Based on an exchange rate of US$1 = 110 Japanese yen. This exchange rate is used for all conversions throughout the paper.

Furthermore, there is a special provision for a gift tax exemption of an amount of up to 20 million yen (about US$182,000) when a residential property or money for acquiring a residential property is transferred between spouses. However, only couples who have been married for 20 years or more are eligible for this exemption and a given couple can use this exemption only once in a lifetime. In other words, if a young couple that has been married for less than 20 years decides to purchase a residential property and the wife does not have sufficient saving to pay for her share or does not have sufficient income to obtain a loan for her share, purchasing the property jointly with her husband will require the payment of gift taxes as the tax office will assume that the husband transferred part of his wealth to his wife to enable her to purchase the property jointly with him. This is likely to prevent married couples from having joint ownership of their residence in cases in which the wife does not have her own income or sufficient wealth.

Other aspects of Japanese society also make Japan an interesting case to study. Japan has been seeing a significant increase in the share of people who never marry over the last few decades. The share of people who had never been married by the age of 50, which is sometimes regarded in Japan as the share of people who never marry in their lifetime, increased from 5.6% and 4.3% in 1990 to 23.4% and 14.1% in 2015 for men and women, respectively.[3] Moreover, a large share of unmarried people reside with their parents. According to the 15th Japanese National Fertility Survey conducted in 2015,[4] the proportion of never married men and women aged 18-34 who reside with their parents was 72.2% and 78.2%, respectively.

The relatively high prevalence of premarital coresidence with parents in Japan reflects limited alternative living arrangements due, at least partly, to such factors as the high cost of housing and normative disapproval of independent living (Raymo and Ono, 2007). Unmarried adult children who live with their parents in order to enjoy the comforts of life are sometimes called “parasite singles” (Yamada, 1999). However, recent studies show that the benefits of being a “parasite single” are enjoyed mainly by relatively young adult children and that, once their parents retire, they may face the need to support their elderly parents and provide elderly care instead (e.g., Okaze, 2014; Takada, 2005). In addition, because of the increased share of irregular employment,[5] particularly among women,

[3] These shares are obtained from Population Statistics 2020 (available at http://www.ipss.go.jp/syoushika/tohkei/Popular/Popular2020.asp?chap=0).
[4] Available at http://www.ipss.go.jp/ps-doukou/j/doukou15/doukou15_gaiyo.asp
[5] Irregular employees include those who work as a part-time worker, temporary worker, fixed-term worker, or dispatched worker from a temporary agency.

over the last few decades, some adult children choose to reside with their parents out of necessity rather than to enjoy a high level of disposable income (e.g., Kitamura and Sakamoto, 2007; Shikata, 2018). Given these trends, Takagi and Silverstein (2006) argue that the composition of multigenerational households of the elderly in Japan is shifting toward a type where the instrumental concerns of both generations take precedence over traditional norms.

The availability of information on personal wealth in the JPSC makes it possible to include in the estimation sample respondents who reside with their parents without conflating their wealth with that of their parents. This also allows us to assess whether living with parents helps adult children accumulate wealth.

3. Literature Review

3.1 Marriage and Wealth

Marriage has generally been found to help accumulate wealth (e.g., Frech, Painter, and Vespa, 2017; Painter, Frech, and Williams, 2015; Ruel and Hauser, 2013; Ulker, 2009; Vespa and Painter, 2011). If we note that wealth accumulation is a function of income, saving, investment strategy, and intergenerational transfers, there are a number of possible reasons why the level of wealth holdings is expected to be greater for married couples than that for unmarried women. Marriage may serve as a wealth-enhancing institution by altering total household production and consumption patterns. Efficiency gains from the division of labor could increase the total output of married couples relative to the aggregation of outputs produced separately by each partner (Becker, 1981). Moreover, married couples may benefit from economies of scale in consumption, which may translate into additional wealth. These advantages associated with marriage are likely to allow married couples to accumulate wealth at a faster rate than they would as two single persons. Note that even with the same saving rate, given that men generally have higher earnings than women and that there is the possibility of dual income, married couples may accumulate more wealth over time than unmarried women for these reasons as well.

Wealth may also be enhanced through investment, which is determined by such factors as the level of financial literacy and/or risk preferences. Given that men are generally found to have a higher level of financial literacy than women (Lusardi and Mitchell, 2008) and that women tend to be more risk averse than men (Croson and Gneezy, 2009), married

couples may allocate their wealth in a way that yields a higher return on their assets than unmarried women (Bertocchi, Brunetti, and Torricelli, 2011; Christiansen, Joensen, and Rangvid, 2015). Married women may also benefit from the financial knowledge of their husbands as well as from the financial security and resource pooling associated with marriage. In addition, since marriage usually implies a long-term commitment, such a commitment may help married couples purchase a house (Grinstein-Weiss et al., 2011; Hendershott et al., 2009), which is found to contribute to greater wealth accumulation (Di, Belsky, and Liu, 2007; Turner and Luea, 2009).

As for the receipt of intergenerational transfers, the amount of such transfers may be greater for married couples than for unmarried women inasmuch as they could in principle receive transfers from either spouse's parents. In the case of Japan, sons, particularly those who carry on the family line, are more likely to receive a bequest than daughters (Hamaaki, Hori, and Murata, 2019). Moreover, Hao (1996) finds that marriage reinforces the wealth enhancing effect of private financial transfers.

While there is a growing literature that examines the relationship between marriage and wealth, one of the limitations of previous studies is that most studies are conducted using data on Western societies. By analyzing the case of Japan, this paper tries to assess whether marriage wealth premiums observed in Western societies are also observed in other parts of the world. To the best of the author's knowledge, there are no previous studies that examine the relationship between marriage and wealth in Japan even though Japan has been observing an increase in the number of unmarried people, as a result of which there is growing concern about whether singles are accumulating sufficient wealth for old age.

3.2 Distribution of Wealth within Married Couples

The previous literature is also limited in another important way. It predominantly uses household wealth as the main outcome variable due largely to the unavailability of data on personal wealth. This is because, unlike information on income, information on wealth is usually collected at the household level in household surveys. The use of household wealth for examining the wealth effect of marriage essentially assumes the equal sharing of household wealth within married couples. Hence, if a couple shares household resources equally, as commonly assumed, there should be no problem with using household wealth to analyze the wealth effect of marriage. However, if this assumption

does not hold, it may be more appropriate to use personal wealth, which takes into account the actual ownership of wealth. In other words, whether the effect of marriage on personal wealth diverges from that on household wealth is likely to depend largely on how household resources are distributed within married couples.

As far as the theoretical work on intrahousehold resource allocation is concerned, there are mainly two different models, namely the unitary and collective models. The difference between these models stems from the structure of decision-making within the household. The former assumes that the couple acts as a unitary unit in which the two spouses pool their incomes and maximize a single common utility function (Becker, 1981). Alternatively, the collective model assumes that the couple acts as a collective unit in which each spouse has different preferences and the observed household consumption, saving, and investment patterns are the result of bargaining within the couple (Chiappori, 1988).[6] If the couple does not pool its resources, as assumed in the collective model, each spouse is likely to have different wealth functions. In other words, if a unitary model holds, it should not matter whether household or personal wealth is used for the analysis. However, if a collective model holds, it is more appropriate to use personal wealth instead.

Empirical evidence from previous research on intrahousehold resource allocation tends to support the collective model.[7] Evidence from relevant studies that look at gender wealth gaps using personal wealth also challenges the assumption of the equal sharing of household resources within married couples. Grabka, Marcus, and Sierminska (2015) and Lee and Pocock (2007) are particularly relevant as they look at wealth gaps within married couples in Germany and South Korea, respectively. Both studies find that wives tend to hold less wealth in their own name than their husbands and that the wealth gap within couples depends on the balance of bargaining power between spouses, which can be proxied by relative income or the receipt of bequests.

Nevertheless, previous studies on the relationship between marriage and wealth are predominantly based on household wealth. The only exception is Lersch (2017), who examines the relationship between marriage and wealth using both household and

[6] Note that, in the field of family research, these theoretical concepts are commonly referred to as relative and absolute resources. According to the relative resource theory originally formulated by Blood and Wolfe (1960), the balance of power within married couples depends on the relative resources that each spouse brings to the household. On the other hand, some studies show that married women have a substantial degree of economic autonomy in domestic lives by showing that their absolute resources matter more than their relative resources (e.g., Gupta, 2007).

[7] See, for example, Chiappori and Molina (2020) for a survey of the empirical literature.

personal wealth in Germany. He finds that both men and women experience substantial wealth premiums of marriage not only in household wealth but also in personal wealth. For women, marriage is found to be wealth-enhancing largely through the couple's joint investment in housing while such an effect of marriage is not observed in the case of nonhousing wealth. By contrast, in the case of men, marriage seems to be beneficial for personal wealth accumulation in types of assets other than housing.

This paper tries to assess whether the finding of the presence of marriage wealth premiums in both household and personal wealth obtained for Germany also holds in the case of Japan where resource pooling in legal terms is hindered by institutional factors, as described in the previous section.

3.3 Marriage Wealth Premiums Over Time

Another limitation of previous studies is that while they generally find a positive effect of marriage on wealth, they predominantly examine the instantaneous effect of marriage on wealth. While there are some studies that look at the effect of the duration of marriage on wealth, the estimation strategy in such studies assumes a linear relationship between marriage and wealth (e.g., French, Painter, and Vespa, 2017; Ulker, 2009; Zagorsky, 2005). For instance, Zagorsky (2005) finds married respondents' wealth to increase by about 16% per year. Ulker (2009) also finds that the length of the longest marriage is positively associated with current household wealth.

It is, however, not clear whether it is appropriate to assume a linear relationship between marriage and wealth as married couples are likely to go through a number of important changes during the course of their marriage. This paper therefore tries to go beyond the existing literature by examining how the relationship between marriage and wealth evolves over the course of the marriage and whether this over-time relationship differs between financial and nonfinancial wealth and between household and personal wealth.

4. Data and Estimation Methods

4.1 Data

The data used for the empirical analysis come from the Japanese Panel Survey of Consumers (JPSC), which has been conducted annually in Japan since 1993 by the

Institute for Research on Household Economics and since 2017 by the Panel Data Research Center at Keio University. One of the unique features of this survey is that it focuses on young women, both unmarried and married, and traces the same individuals on a yearly basis. The initial sample at the start of the survey in 1993 comprised 1,500 women aged 24-34. Subsequently, 500 women aged 24-27 in 1997, 836 women aged 24-29 in 2003, 636 women aged 24-28 in 2008, and 648 women aged 24-28 in 2013 were added to the sample. The sample was drawn each time to be nationally representative using two-stage stratified random sampling. The relatively high response rate (e.g., about 96% in the case of the latest (25^{th}) wave) helps maintain the representativeness of the sample for the age group in question. Table A1 in Appendix compares the JPSC data with those from other nationally representative surveys conducted by the Government of Japan. While an exact comparison is not possible, the figures in Table A1 show that the JPSC data are broadly consistent with those from other surveys.

For the present analysis, I use mainly data from the 11^{th} to the 25^{th} waves of the survey, which were conducted during the 2003-2017 period because earlier waves do not collect all of the information required for the present analysis. Note that the data used for the present analysis are unbalanced panel data. The estimation sample comprises 2,923 respondents with 19,541 individual-year observations after removing observations with missing information. Table A2 in Appendix shows that the estimation sample remains largely consistent with the original sample in terms of key variables.

4.2 Estimation Methods

To investigate the relationship between marriage and wealth, I estimate the following fixed-effects regression model:

$$w_{it} = \alpha + \beta M_{it} + \gamma X_{it} + v_i + \varepsilon_{it} \quad (1)$$

where w_{it} is the wealth level of respondent i in year t, M_{it} contains variables that capture the respondent's marital status, X_{it} contains variables pertaining to the time-variant socioeconomic characteristics of the respondent, v_i captures individual time-invariant unobservables, and ε_{it} is an error term.

The fixed-effects regression model essentially focuses on variations over time for the same person. Hence, if I include in the estimation model a dummy variable for being

married, the coefficient on this variable captures the effect of a transition into marriage on wealth holdings. However, the wealth effect of marriage may change over time. To examine the short-term and long-term effects of marriage, the present analysis also looks at the relationship between marriage and wealth for each year after marriage by including in the estimation model a set of dummy variables that denote the number of years since the respondent's marriage, as explained in detail below.

One of the issues that could arise when estimating the relationship between marriage and wealth is the non-random sorting of individuals into marriage. Estimating a fixed-effects regression model eliminates selection bias due to time-invariant unobservable characteristics, though the estimates are still potentially subject to bias due to time-variant unobservable characteristics. Unfortunately, there are no appropriate instruments that can be used for the set of marriage duration dummies included in the empirical model. This therefore limits the analysis to at best identifying associations between marriage and wealth, and I cannot infer causality from the present analysis. Nevertheless, the present analysis still performs the important task of opening up the black box of how married and unmarried women accumulate wealth over time, which has direct implications for their economic wellbeing in retirement.

Dependent Variables

As indicated in equation (1), the dependent variable in this analysis is the level of wealth. I use wealth information at both the household and personal levels to examine whether the wealth effect of marriage differs depending on which measure of wealth I use. I also use both financial and nonfinancial wealth as dependent variables in addition to using total wealth to see whether the relationship between marriage and wealth differs depending on the type of wealth. Note that all the wealth variables employed in the empirical analysis are expressed as net worth by subtracting the value of loans from the value of wealth.

In the survey, unmarried respondents are asked to indicate the total value of saving and that of securities held in their own name. The former includes various types of saving accounts in post offices, banks, and shinkin banks (credit unions), payroll saving, gold investment/saving accounts, and medium-term government security funds while the latter includes bonds, stocks, investment trusts, and loan and money trusts evaluated at market prices. In the case of married respondents, they are asked to indicate the total value of

saving and that of securities held by their households as a whole[8] as well as those held in respondents' own name. The survey also collects information on the total value of saving-type insurance in which the respondent or, in case she is married, her husband is enrolled. Financial wealth is thus calculated by adding the total values of saving, securities, and insurance.

As for nonfinancial wealth, it is defined as the market value of respondents' primary residence (house/condominium including land, if applicable). Respondents are asked to indicate the market value and ownership of their primary residence and land (if applicable) if they live in a house/condominium owned by themselves or by their family members. Unfortunately, in the case of joint ownership, the data do not provide each family member's exact ownership share of the property and land. I therefore assume the equal sharing of nonfinancial wealth among family members who jointly own the property and land.

Financial and nonfinancial net worth are then calculated by subtracting the total value of nonhousing and housing loans from the total value of financial and nonfinancial wealth, respectively, and total net worth is calculated as the sum of financial and nonfinancial net worth. Note that the survey does not collect information on loans at the personal level in the case of married respondents. I therefore assume that the respondent is responsible for the same shares of nonhousing and housing loans as her shares of financial and nonfinancial wealth owned by the married couple, respectively.

Note that, due to the unavailability of data, the wealth variables in this analysis do not include the value of second homes, pension wealth, motor vehicles, and consumer durables. Since men tend to own more of such assets, the wealth accumulation gap between married and unmarried women in the present analysis is likely to be a lower bound of the true gap.

In sum, for the unmarried sample, I construct three dependent variables—namely, personal net worth for total, financial, and nonfinancial wealth. As for the married sample, I construct six dependent variables—namely, household and personal net worth for total, financial, and nonfinancial wealth. In the case of household net worth, household wealth

[8] Only financial assets held by the respondent, her husband, and their children are included. Unfortunately, I cannot separate the financial wealth held in the children's names from the financial wealth held in the respondent's or her husband's name. Nevertheless, the share of financial wealth held in the children's names is presumably relatively small.

is assumed to be shared equally between the respondent and her husband. To account for the fact that consumption needs are related to household size, I express household net worth as equivalized household net worth by summing the respondent's own personal net worth and that of her husband and dividing the total value by the square root of two (i.e., the respondent and her husband). I do not use total household size to make this adjustment but control for the number of children in the regression analysis instead.[9]

Finally, to correct for the skewness of the wealth distribution, the value of the wealth-related variables is transformed using the inverse hyperbolic sine (IHS) function, which allows us to retain negative and zero values, unlike in the case of a logarithmic transformation.

Explanatory Variables

The main explanatory variables of interest in the present analysis are the respondent's marital status variables. In the fixed-effects regression models, the coefficient on a simple marriage dummy variable would capture only the short-term relationship between marriage and wealth. In order to investigate the longer-term relationship and how it evolves over time, I also include a set of marriage duration dummy variables. More specifically, I include a variable that equals one if the respondent marries and is in the transition year, a dummy variable that equals one if she is married and is in the year after the transition year, a dummy variable that equals one if she is married and is in the second year after the transition year, and so forth, up to 30 years after the transition year. For longer marriage durations, I include a dummy variable that equals one if the respondent is married and is in the 31st year or later after the transition year. In addition to this set of variables, I include a dummy variable that equals one if the respondent is divorced. Given that the sample comprises relatively young women, I have too few observations on widows to have a separate dummy variable for them. I therefore exclude respondents who are widowed from the estimation sample.

Note that the JPSC does not collect information on cohabitation. However, cohabitation remains relatively rare in the case of Japan. According to data from the 15th Japanese National Fertility Survey conducted in 2015,[10] the proportion of people who were

[9] Note that the regression analysis was also conducted using as the dependent variable a measure of equivalized household net worth that also takes into account the number of children, but the results were similar to those reported in this paper. These regression results are available from the author upon request.
[10] Available at http://www.ipss.go.jp/ps-doukou/j/doukou15/doukou15_gaiyo.asp

cohabiting at the time of the survey was only 1.8% (1.7%) among never married women (men) aged 18-34.

As for other explanatory variables, I include in the estimation model the number of children as well as a variable for residing with parents/parents-in-law. The latter variable equals one only if the respondent resides with her parents/parents-in-law and shares living expenses with them. I also control for income: in the case of unmarried respondents, I use their personal income, and for married respondents, I use the sum of their personal income and that of their husbands and adjust it for economies of scale in consumption by dividing it by the square root of two, as I do for the wealth variables. In addition, I include in the estimation model the total amount of bequests and/or inter vivos transfers received from the respondent's parents/parents-in-law during the past year. I use the IHS transformation of these income and intergenerational transfer variables, as I do for the wealth variables. All of the wealth, income, and intergenerational transfer variables are expressed in 2017 prices.

How wealth is distributed within married couples may depend on how the household budget is managed on a daily basis within the household. In the JPSC, respondents are asked which type (out of 18 different types) best describes the way in which the monthly household budget is managed in their households. Based on responses to this question, I sort respondents into 5 different categories: (i) the respondent receives her husband's entire income or the respondent is unmarried; (ii) the respondent receives part of her husband's income but she does not share her own income; (iii) the respondent receives part of her husband's income and she also shares her own income or does not have her own income; (iv) the respondent and her husband manage their respective income separately; and (v) the respondent gives her entire income to her husband.

Finally, I control for the key characteristics of the respondent, including her age, age squared, and employment status. I also include year dummies, regional dummies, and a dummy variable for residing in a major city.

5. Empirical Results

5.1 Descriptive Statistics

Table 1 shows summary statistics for the dependent and explanatory variables. About

37% of the sample is unmarried.

The average level of personal total net worth for the full sample is about 3.1 million yen (about US$ 28,200), whereas the average figure for the never married sample (4.2 million yen) is found to be significantly greater than that for the married sample (2.5 million yen) (see Figure 1). These figures suggest that married women are not necessarily wealthier than never married women if wealth is measured as personal wealth. However, if wealth is measured in terms of household wealth for the married sample (i.e., equivalized household net worth) on the assumption that household resources are shared equally within married couples, married women are found to have a higher level of wealth (7.5 million yen) than their never married or divorced counterparts.

To take a closer look at differences in wealth accumulation patterns between married and never married women, Figure 2 shows the average level of personal total net worth over the life cycle of married and never married women. For married women, it also shows the average level of equivalized household total net worth. As far as personal total net worth is concerned, Figure 2 clearly shows that never married women accumulate wealth much faster than married women. However, if we assume that household wealth is shared equally within married couples and use equivalized household total net worth for the married sample instead, the wealth accumulation patterns of married and never married women are found to be similar up to the age of about 50, but they start diverging thereafter: never married women's wealth starts stagnating while that of married women continues to increase. Figure 2 therefore seems to suggest that the wealth premium of marriage is relatively limited in Japan and that it is observed only at a later stage of the life cycle and also only under the assumption that household wealth is shared equally within married couples.

Do married couples share their wealth equally, as is commonly assumed? Table 2 shows that married women own, on average, only about 22% of household total wealth (gross wealth) in the case of Japan. Moreover, among married couples who own their primary residence (and land, if applicable), married women own, on average, only about 16% of their primary residence. Note that only about 29% of married women own part or all of their primary residence among married couples who own their primary residence. Table 2 also suggests that the share of married women's wealth in total household wealth is larger only for those who have regular employment.

Table 1: Summary Statistics

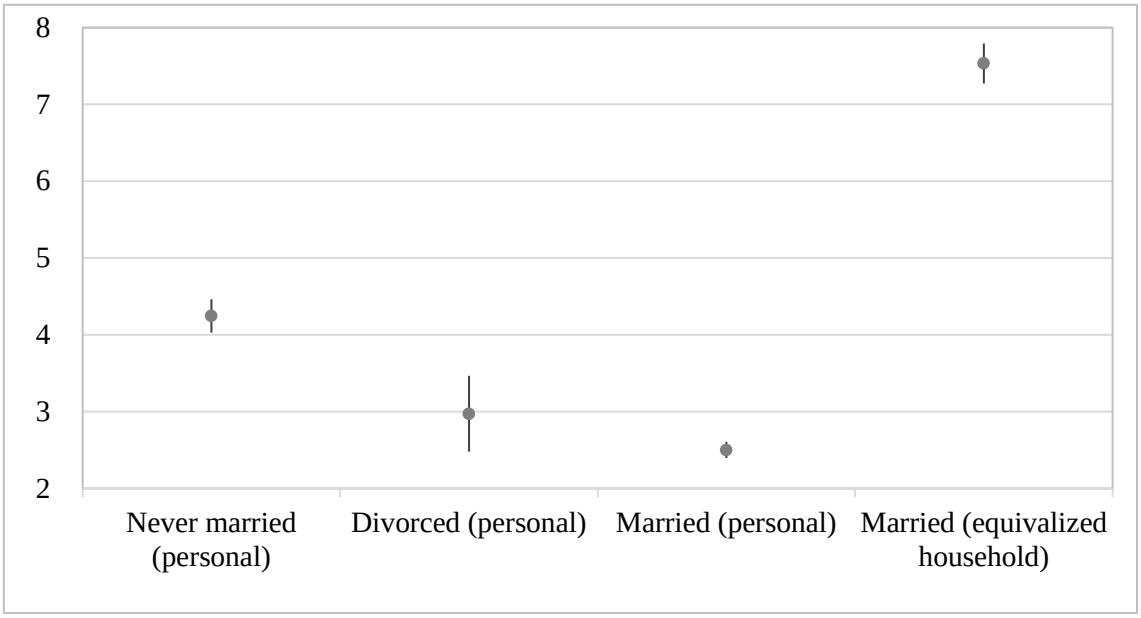
	Mean	S.D.	Min.	Max.
Personal total net worth (IHS-transformed)	1.00	1.30	-4.74	5.79
Untransformed value (million yen)	3.05	7.15	-57.24	164.32
Personal financial net worth (IHS-transformed)	0.97	1.15	-3.94	5.79
Untransformed value (million yen)	2.60	5.79	-25.73	164.32
Personal nonfinancial net worth (IHS-transformed)	0.11	0.78	-4.74	5.59
Untransformed value (million yen)	0.45	3.58	-57.24	133.59
Equivalized household total net worth (IHS-transformed)*	1.56	1.93	-4.35	6.12
Untransformed value (million yen)*	7.53	14.73	-38.79	226.88
Equivalized household financial net worth (IHS-transformed)*	1.63	1.39	-4.31	5.31
Untransformed value (million yen)*	5.51	8.88	-37.17	101.32
Equivalized household nonfinancial net worth (IHS-transformed)*	0.39	1.70	-4.39	5.85
Untransformed value (million yen)*	2.02	9.14	-40.47	173.30
Marital status				
Never married	0.29		0	1
Married	0.63		0	1
Divorced	0.08		0	1
Number of children	1.23	1.16	0	7
Co-resides with parents/parents-in-law	0.29		0	1
Equivalized annual income (IHS-transformed)	1.93	0.60	0	4.61
Untransformed value (million yen)	3.97	2.40	0	50.35
Intergenerational transfers (IHS-transformed)	0.04	0.32	0	5.19
Untransformed value (million yen)	0.14	1.78	0	90.18
Budget management				
Respondent controls	0.79		0	1
Respondent does not share but husband shares	0.03		0	1
Respondent shares and husband shares	0.15		0	1
Separate management	0.03		0	1
Husband controls	0.01		0	1
Respondents' characteristics				
Age	37.52	7.96	24	58
Age squared/100	14.71	6.25	5.76	33.64
Employment status				
Regular worker	0.31		0	1
Irregular worker	0.35		0	1
Self-employed	0.06		0	1
Not in labor force	0.28		0	1
Resides in a major city	0.29		0	1
No. of observations		19,541		
No. of individuals		2,923		

S.D. = standard deviation, Min. = minimum value, Max. = maximum value

* Figures for equivalized household net worth are based on the married sample only.

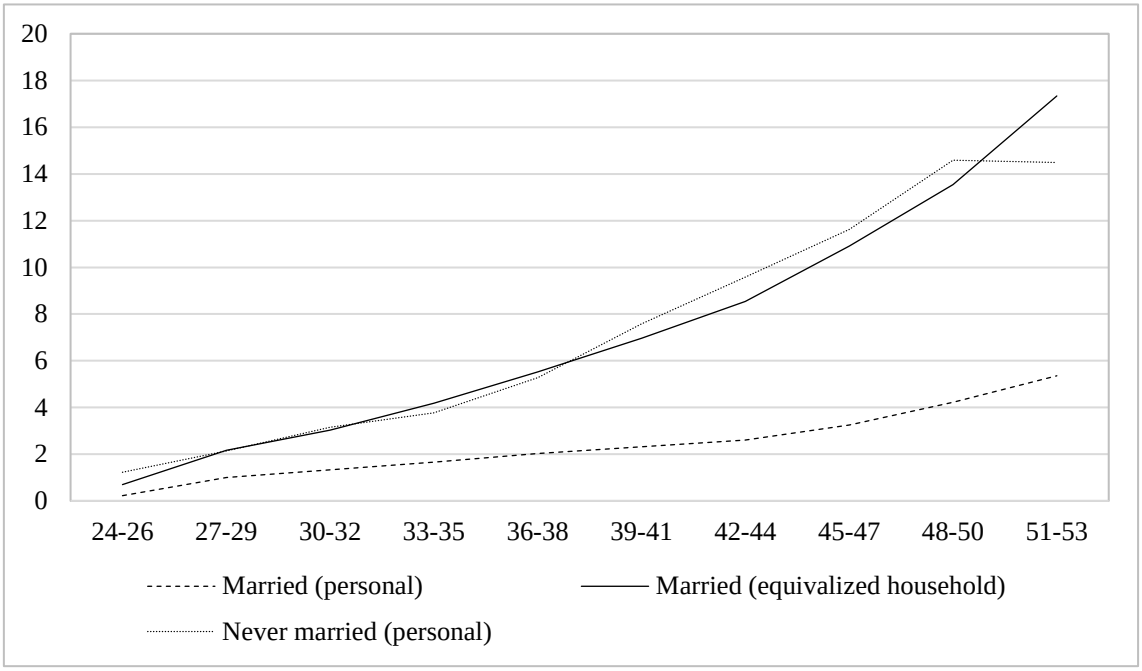
Source: Calculations based on data from the JPSC.

Figure 1. The Average Level of Total Net Worth by Marital Status (Million Yen)



Note: Spikes indicate the 95% confidence interval.
Source: Calculations based on data from the JPSC.

Figure 2. The Average Level of Personal/Equivalized Household Wealth (Total Net Worth) by Age Group (Million Yen)



Source: Calculations based on data from the JPSC.

Table 2. Wives' Share of Household Income and Wealth

	Mean	Standard deviation
All respondents		
Income	0.18	0.19
Total wealth	0.22	0.26
Financial wealth	0.25	0.26
Nonfinancial wealth	0.16	0.28
Respondents who are employed		
Income	0.26	0.18
Total wealth	0.24	0.27
Financial wealth	0.28	0.27
Nonfinancial wealth	0.18	0.29
Respondents who have regular employment		
Income	0.41	0.15
Total wealth	0.35	0.27
Financial wealth	0.37	0.28
Nonfinancial wealth	0.30	0.31

Note: The figures in the table are based on married respondents for whom positive amounts are recorded for household total income, total wealth, financial wealth, and nonfinancial wealth.
Source: Calculations based on data from the JPSC.

The relatively small proportion of married women who own all or part of their primary residence in Japan is in sharp contrast to what Lersch (2017) finds for Germany. Lersch (2017) shows that, in the case of Germany, married women are able to accumulate more wealth than their never married counterparts mainly through joint investment in housing with their husbands. Sierminska, Frick, and Grabka (2010) also find for Germany that housing wealth tends to be shared more than nonhousing wealth within married couples.

5.2 Regression Results

To examine the relationship between marriage and wealth, I conduct a regression analysis, as explained in Section 4.2. Table 3 shows the estimation results for the fixed-effects regression models.

Table 3: Estimation Results for Determinants of Wealth (Fixed-effects Models)

	Personal total net worth		Personal financial net worth		Personal nonfinancial net worth		Personal/equivalized household total net worth		Personal/equivalized household financial net worth		Personal/equivalized household nonfinancial net worth	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Marital status (never married)												
Duration dummies						See Figures 3-5						
Divorced	-0.313***	0.109	-0.297***	0.098	-0.004	0.064	-0.007	0.160	-0.030	0.119	0.112	0.142
Number of children	-0.042	0.026	-0.048**	0.020	0.005	0.022	-0.042	0.035	-0.041*	0.022	0.041	0.034
Co-resides with parents/parents-in-law	0.070*	0.037	0.064**	0.032	0.014	0.026	0.072	0.047	0.055	0.034	0.040	0.042
Equivalized annual income	0.117***	0.026	0.129***	0.025	-0.011	0.015	0.160***	0.034	0.166***	0.028	0.001	0.028
Intergenerational transfers	0.078***	0.022	0.030*	0.017	0.064***	0.023	0.112***	0.023	0.019	0.023	0.127***	0.032
Budget management (Respondent controls)												
Respondent does not share but husband shares	0.126**	0.052	0.106**	0.042	0.018	0.042	0.120*	0.069	0.140***	0.049	0.006	0.065
Respondent shares and husband shares	0.054	0.033	0.053**	0.025	-0.001	0.026	0.082*	0.047	0.095***	0.030	-0.014	0.045
Separate management	0.045	0.067	0.099*	0.058	-0.044	0.044	-0.093	0.106	0.067	0.071	-0.203**	0.089
Husband controls	0.011	0.080	-0.024	0.066	0.053	0.058	-0.125	0.107	0.034	0.073	-0.148	0.094
Age	0.117***	0.019	0.134***	0.017	-0.021*	0.012	0.133***	0.023	0.155***	0.018	-0.035*	0.020
Age squared/100	-0.094***	0.024	-0.121***	0.022	0.039**	0.017	-0.113***	0.031	-0.146***	0.024	0.060**	0.028
Employment status (Not in labor force)												

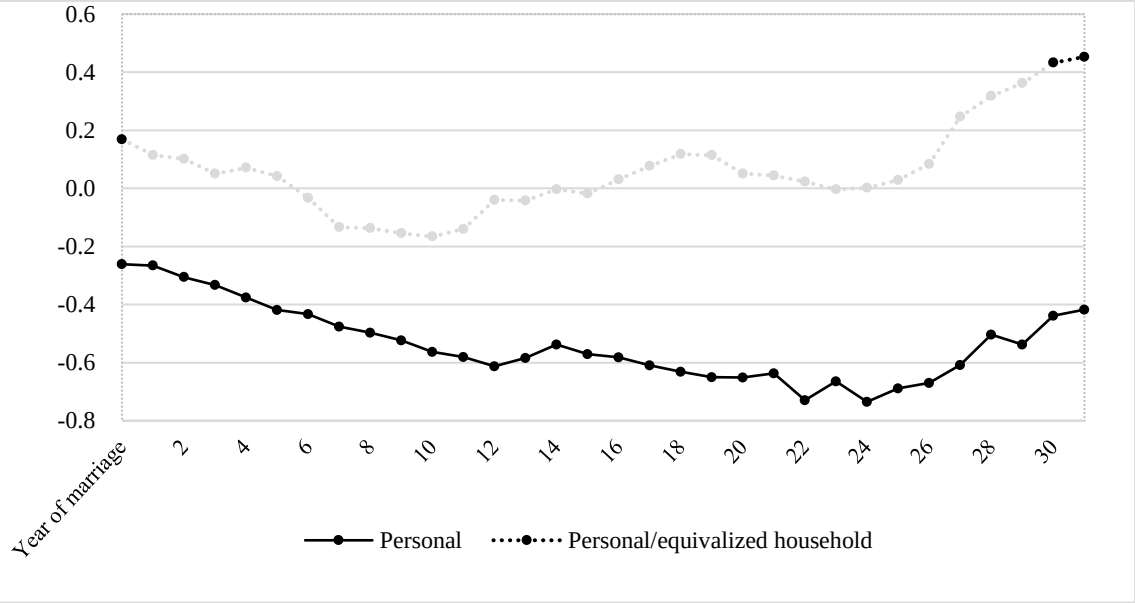
	Personal total net worth		Personal financial net worth		Personal nonfinancial net worth		Personal/equivalized household total net worth		Personal/equivalized household financial net worth		Personal/equivalized household nonfinancial net worth	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Regular worker	0.017	0.036	0.023	0.030	-0.018	0.025	-0.066	0.045	-0.065*	0.033	-0.042	0.042
Irregular worker	-0.045*	0.025	-0.039*	0.020	-0.006	0.018	-0.107***	0.036	-0.084***	0.025	-0.025	0.037
Self-employed	0.064	0.064	0.030	0.045	0.051	0.048	-0.049	0.093	-0.121	0.064	0.078	0.091
Resides in a major city	0.024	0.050	0.022	0.042	0.024	0.043	-0.045	0.081	-0.004	0.052	-0.087	0.081
Constant	-1.489***	0.424	-1.777***	0.386	0.304	0.224	-1.665***	0.484	-2.158***	0.416	0.608	0.376
R^2	0.142		0.171		0.012		0.118		0.170		0.044	
No. of observations	19,541		19, 541		19, 541		19, 541		19, 541		19, 541	
No. of individuals	2,923		2,923		2,923		2,923		2,923		2,923	

Coef. = coefficient, S.E. = standard error

Note: The results in the first three columns of the table are based on regression analyses in which personal wealth is used for both the married and unmarried samples. The results in the last three columns of the table are based on regression analyses in which personal wealth is used for the unmarried sample while equivalized household wealth is used for the married sample. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Regional and year dummies are included in all regressions. Standard errors are clustered at the individual level.

Source: Estimation based on data from the JPSC.

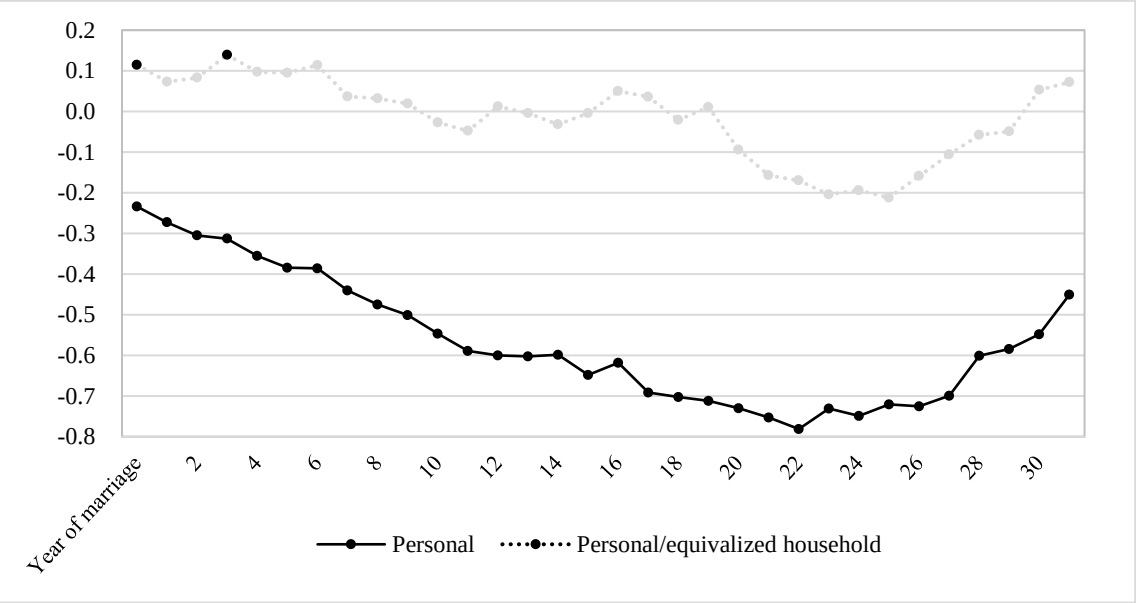
Figure 3. Estimated Coefficients on Marriage Duration Dummies (Total Net Worth)



Note: The dotted line noted as "personal" shows the estimated coefficients on marriage duration dummies from the regression analysis in which personal wealth is used for both the married and unmarried samples. The solid line noted as "personal/equivalized household" shows the estimated coefficients on marriage duration dummies from the regression analysis in which personal wealth is used for the unmarried sample while equivalized household wealth is used for the married sample. The rest of the regression results are reported in Table 3. Only the coefficients in black (i.e., not those in grey) are statistically significant at least at the 10% level.
Source: Estimation based on data from the JPSC.

In order to investigate the longer-term relationship between marriage and wealth and how it evolves over time, I include in the estimation model a set of marriage duration dummies, instead of including a dummy variable for being married, as explained in Section 4.2. The coefficients on these marriage duration dummies are reported in Figures 3-5. They indicate how the wealth premium of marriage changes as the duration of marriage becomes longer. Note that the base category for these marriage duration dummies is never married. The solid lines show the coefficients obtained from the regression analyses in which personal wealth is used as married women's wealth holding measure whereas the dotted lines show those obtained from the regression analyses in which household wealth is used instead. Note that only the estimated coefficients that are shown in black (i.e., not those in grey) in these figures are statistically significant.

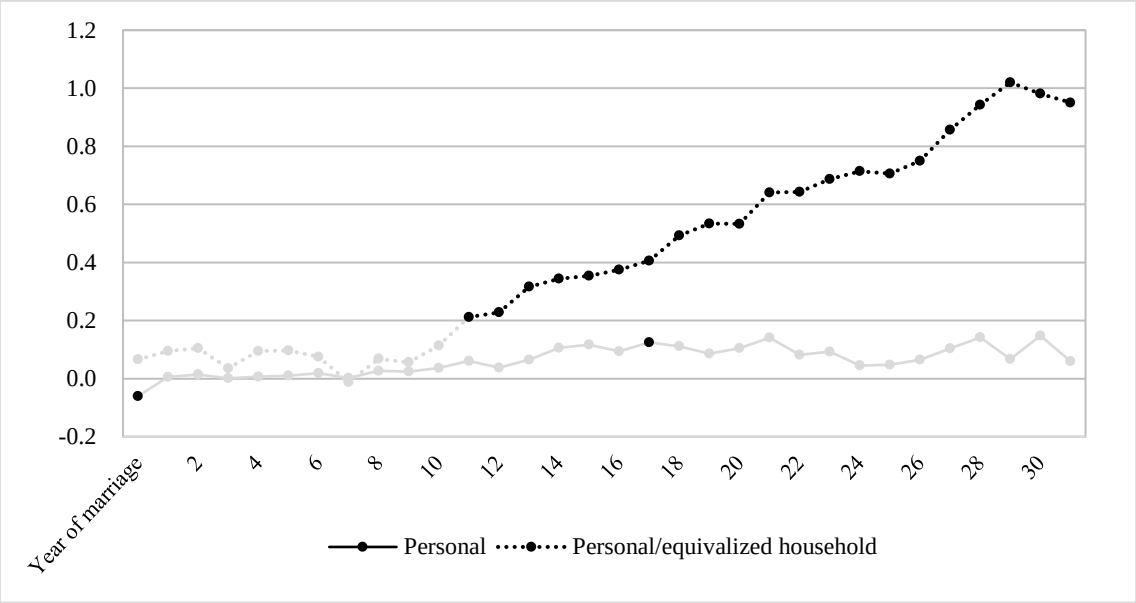
Figure 4. Estimated Coefficients on Marriage Duration Dummies (Financial Net Worth)



Note: The dotted line noted as "personal" shows the estimated coefficients on marriage duration dummies from the regression analysis in which personal wealth is used for both the married and unmarried samples. The solid line noted as "personal/equivalized household" shows the estimated coefficients on marriage duration dummies from the regression analysis in which personal wealth is used for the unmarried sample while equivalized household wealth is used for the married sample. The rest of the regression results are reported in Table 3. Only the coefficients in black (i.e., not those in grey) are statistically significant at least at the 10% level.
Source: Estimation based on data from the JPSC.

If personal wealth is used as the measure of wealth, marriage is found to be negatively and significantly associated with total net worth throughout the duration of the marriage (see Figure 3). A similar relationship is observed between marriage and financial net worth (see Figure 4). Figures 3 and 4 also show that the relationship between marriage and wealth is not linear, unlike what is often assumed in the previous literature, suggesting the importance of allowing the effect of marriage to be non-linear. As for the relationship between marriage and nonfinancial net worth, it is found to be hardly significant statistically (see Figure 5). This is not surprising given that a relatively small number of women own their primary residence in their own name regardless of their marital status.

Figure 5. Estimated Coefficients on Marriage Duration Dummies (Nonfinancial Net Worth)



Note: The dotted line noted as "personal" shows the estimated coefficients on marriage duration dummies from the regression analysis in which personal wealth is used for both the married and unmarried samples. The solid line noted as "personal/equivalized household" shows the estimated coefficients on marriage duration dummies from the regression analysis in which personal wealth is used for the unmarried sample while equivalized household wealth is used for the married sample. The rest of the regression results are reported in Table 3. Only the coefficients in black (i.e., not those in grey) are statistically significant at least at the 10% level.
Source: Estimation based on data from the JPSC.

These results are in sharp contrast to what Lersch (2017) finds for Germany where substantial wealth premiums of marriage are found for women not only in household wealth but also in personal wealth, mainly through joint investment in housing with their husbands. Institutional barriers that prevent married couples from having joint ownership of their residence in cases in which wives do not have sufficient income or wealth may explain the absence of marriage wealth premiums in the case of personal wealth in Japan.

Moreover, in the case of Japan, a relatively large share of women still faces disruptions in their careers due to childbearing and childrearing. Even if they remain or return to the labor market, they tend to reduce their working hours. Only about 19% of the married sample is engaged in regular employment as opposed to 52% for the unmarried sample. Table 3 shows that, among the employment-related variables, only the coefficients on irregular employment are statistically significant. The fact that they are negative suggests the possibility that women in irregular employment work out of necessity.

Table 4: Estimated Coefficients on Respondents' and Their Husbands' Income and Intergenerational Transfers from Respondents' Parents/Parents-in-law

	Personal total net worth		Personal financial net worth		Personal nonfinancial net worth	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Respondent's own annual income	0.121***	0.022	0.125***	0.018	0.007	0.017
Respondent's husband's annual income	-0.011	0.036	0.034	0.028	-0.049*	0.028
Intergenerational transfers received from respondent's parents	0.169***	0.036	0.077***	0.027	0.119***	0.039
Intergenerational transfers received from respondent's parents-in-law	-0.010	0.023	-0.022	0.019	0.016	0.024
No. of observations	19,541		19,541		19,541	
No. of individuals	2,923		2,923		2,923	

Coef. = coefficient, S.E. = standard error
Note: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. The rest of the explanatory variables included in Table 3 as well as year and regional dummies are included in all regressions. Standard errors are clustered at the individual level.
Source: Estimation based on data from the JPSC.

To investigate the implications of women's employment for their wealth accumulation in more detail, a regression is run separating the income variable into two variables – one for the respondent's own income and the other for her husband's income. Similarly, I separate the intergenerational transfer variable into two variables – one for transfers from the respondent's own parents and the other for transfers from her parents-in-law. The relevant regression results are shown in Table 4.[11]

Table 4 clearly indicates that personal financial net worth, and hence total net worth, is accumulated mainly through the respondent's own income as well as through transfers from her own parents, while personal nonfinancial net worth is accumulated mainly through transfers from her own parents. By contrast, the income of the respondent's husband or transfers from her parents-in-law hardly have any bearing on her personal wealth, which seems to challenge the commonly made assumption of the equal sharing of wealth within married couples.

[11] The rest of the regression results remain similar to those reported in Table 3. The full regression results are available from the author upon request.

Nevertheless, married women potentially have access to all or part of the wealth owned by their husbands. If we assume that household wealth is shared informally within married couples, it might be more appropriate to use household wealth as married women's wealth holding measure.

When equivalized household wealth is used as the dependent variable for the married sample, marriage is found to be positively and significantly associated with nonfinancial net worth but only when respondents have been married for 11 years or longer, and the effect becomes larger with the duration of the marriage (see Figure 5). The positive relationship between marriage and nonfinancial wealth is due partly to the fact that Japanese people tend to purchase their primary residence after they marry. Moreover, given that the wealth variables in this analysis are expressed as net worth, it is possible that the positive relationship between marriage and nonfinancial wealth is observed only after people pay off a certain amount of their housing loans.

As for total and financial net worth, their relationship with marriage is hardly significant statistically (see Figures 3 and 4). This is rather surprising given that previous studies predominantly show a positive relationship between marriage and wealth, as discussed in Section 3. The limited positive effect of marriage in the case of Japan even when household wealth is used as married women's wealth holding measure may be explained by the fact that married women tend to withdraw from the labor market or reduce their labor supply in order to meet their family responsibilities. Hence, even if married couples share equally the wealth accumulated through husbands' income, married women may not necessarily be able to accumulate more wealth than their unmarried counterparts.

On the other hand, these results also imply that married women can accumulate as much wealth as unmarried women even if they earn less income, allowing them to enjoy a level of economic wellbeing no lower than that of their unmarried counterparts despite their limited labor supply. Furthermore, there are some signs in the empirical results that the wealth premium of marriage is realized when the duration of marriage becomes longer, particularly as married couples pay off their housing loans. Given that the sample used for the empirical analysis in this paper is relatively young, it would be interesting to reexamine how the relationship between marriage and wealth evolves over longer durations when the necessary data become available.

The rest of the regression results are broadly similar regardless of whether I use

equivalized household or personal net worth for the married sample (see Table 3). The number of children is negatively and significantly associated with financial net worth, which suggests that the cost of raising children outweighs the positive effect of having children on financial wealth such as creating an incentive to accumulate wealth in order to leave a bequest. Household income is positively and significantly associated with total and financial net worth, as expected. As for the receipt of intergenerational transfers, its positive relationship with total net worth seems driven mainly through its effect on nonfinancial net worth. On the other hand, co-residing with parents/parents-in-law seems to help women accumulate personal total and financial wealth.

Turning finally to the implications of household budget management type for wealth accumulation, it is interesting to find that women in households in which the husband shares his income with his wife have higher personal and household wealth than women in households in which the husband gives his entire income to his wife.

6. Conclusions

This paper examined the relationship between marriage and wealth over time in the case of Japan using the JPSC data. By exploiting the availability of data on personal wealth, it also investigated whether the effect of marriage on wealth differs depending on whether wealth is measured in terms of household or personal wealth.

When equivalized household net worth is used as married women's wealth holding measure on the assumption that household resources are shared equally within married couples, marriage is found to contribute to women's wealth holdings but only to their nonfinancial net worth though there are some signs that it also contributes to their total net worth as the duration of marriage becomes longer. On the other hand, if wealth is measured in terms of personal net worth, marriage is found to be negatively and significantly associated with women's wealth holdings, more specifically with their total and financial net worth.

The observed negative effect of marriage on personal wealth in the case of Japan is in sharp contrast to the positive effect found for Germany where married women are found to be able to accumulate their personal wealth largely through joint investment in housing with their husbands (Lersch, 2017). The joint ownership of housing seems to be less common in Japan and only a relatively small proportion of married women own housing

wealth. This may be due partly to the fact that married women in Japan are more likely than those in other developed countries to leave the labor market or to reduce their working hours for childbearing and childrearing, as a result of which their lifetime income is likely to be lower. Moreover, this cannot be compensated for by wealth transfers from husbands for the purposes of joint investment in housing because wealth transfers between spouses are subject to gift taxes in Japan.

These results cast doubt on the commonly made assumption that household wealth is shared equally within married couples. At least in the case of Japan, the actual allocation of intrahousehold resources seems more in line with the collective model rather than the unitary model. This, in turn, suggests that Japanese women have an undesired economic dependency on their husbands and that their bargaining power within married couples is relatively weak.

Finally, the empirical results obtained in the present analysis underscore the importance of looking at the relationship between marriage and wealth over time as the relationship is found to differ with marriage duration.

The empirical analysis conducted in this paper is, however, not without caveats. While estimating fixed-effects regression models helps eliminate selection bias due to time-invariant unobservable characteristics, the estimates are still potentially subject to possible bias due to time-variant unobservable characteristics. The difficulty of identifying appropriate time-variant instruments did not allow me to fully address this issue, and it is left as an important agenda for future research. In addition, the relatively young sample prevented me from examining the wealth premium of marriage over a longer horizon. Furthermore, while the JPSC provides unique data on personal wealth, they have important limitations, such as the absence of information on each family member's exact ownership share of nonfinancial wealth when nonfinancial wealth is owned jointly among family members. Some assumptions therefore had to be made to calculate respondents' personal wealth. This is likely to have caused some noise to the empirical analysis and we certainly need to interpret the results with caution.

Nevertheless, the findings of this paper have some important policy implications. The results suggest that promoting gender equality in the labor market will help women enhance their economic wellbeing and accumulate sufficient wealth for old age regardless of their marital status. It is equally important to create an environment where married

women can continue working even after getting married or bearing a child so that they will not have to rely so heavily on their husbands for their economic wellbeing. Finally, removing institutional barriers such as the imposition of gift taxes on wealth transfers between spouses will help enhance the equal sharing of household wealth within married couples even in a formal sense.

Appendix

Table A1. Comparison with Other Nationally Representative Surveys (2015)

	JPSC (2015 wave)	Comparison	Data source
Women's marital status (%)			
Married (aged 25-29)	37.3	36.3	2015 Population Census
Married (aged 30-39)	65.5	65.7	2015 Population Census
Married (aged 40-49)	74.2	72.2	2015 Population Census
Women's employment status (%)			
Employed (aged 25-34)	76.1	72.1	2015 Labor Force Survey
Employed (aged 35-44)	74.7	71.2	2015 Labor Force Survey
Employed (aged 45-54)	78.2	74.8	2015 Labor Force Survey
Homeownership (%)			
Married			
Husband aged 25-34	37.5	36.0	2015 Population Census
Husband aged 35-44	63.5	65.8	2015 Population Census
Husband aged 45-54	79.1	76.9	2015 Population Census
Unmarried			
Aged 25-34	5.2	4.7	2015 Population Census
Aged 35-44	14.9	14.9	2015 Population Census
Aged 35-54	41.2	33.7	2015 Population Census
Household income (million yen)			
Married			
Husband aged 25-29	5.3	5.0	2015 Family Income and Expenditure Survey (FIES)
Husband aged 30-34	6.1	5.8	2015 FIES
Husband aged 35-39	7.0	6.6	2015 FIES
Husband aged 40-44	6.9	7.2	2015 FIES
Husband aged 45-49	8.1	8.0	2015 FIES
Husband aged 50-54	8.5	8.5	2015 FIES
Unmarried (employed)			
Aged less than 35	3.3	3.4	2015 FIES
Aged 35-59	3.6	3.8	2015 FIES
Financial assets (million yen)			
Married			
Husband aged 25-29	2.9	2.7	2015 FIES
Husband aged 30-34	4.2	5.3	2015 FIES
Husband aged 35-39	6.4	7.7	2015 FIES
Husband aged 40-44	6.7	9.2	2015 FIES
Husband aged 45-49	11.1	11.3	2015 FIES
Husband aged 50-54	11.5	15.7	2015 FIES

Note: In the case of homeownership rates and levels of household income and financial assets, the figures for married are based on married couples who live by themselves (with or without children) and those for unmarried are based on unmarried women who live by themselves. Note that the FIES data do not contain information on the financial assets of single-person households.

Source: Calculations based on data from the JPSC (based on respondents who reported a value for the respective variable), the 2015 Population Census (https://www.stat.go.jp/data/kokusei/2015/kekka.html), the 2015 Labor Force Survey (https://www.stat.go.jp/data/roudou/index2.html#kekka), and the 2015 Family Income and Expenditure Survey (https://www.stat.go.jp/data/kakei/index2.html#kekka).

Table A2. Comparison of the Estimation Sample with the Original Sample

	(a) Original sample	(b) Estimation sample
Respondent's characteristics		
Age (years)	35.7	37.5
Married (%)	68.3	62.9
Employed (%)	72.1	72.4
Wealth		
Homeownership (%)	52.2	47.9
Personal total net worth (million yen)	3.0	3.0
Household total net worth (million yen)	7.9	8.2
No. of observations	46,258	19,541

Note: The homeownership rate is based on respondents who do not reside with their parents/parents-in-law. The figures in column (a) are based on the original sample (based on respondents who reported a value for the respective variable). The figures in column (b) are based on the estimation sample that remains after removing those who are widowed and those with missing information for any of the variables included in the estimation model.
Source: Calculations based on data from the JPSC.

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